UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 24, 2008

Mr. David A. Christian
President and Chief Nuclear Officer
Dominion Nuclear Connecticut, Inc.
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: MILLSTONE POWER STATION, UNITS 2 AND 3 - RELIEF REQUESTS FOR THE FOURTH 10-YEAR AND THIRD 10-YEAR PUMP AND VALVE INSERVICE TESTING PROGRAMS, RESPECTIVELY (TAC NOS. MD7763 THROUGH MD7771)

Dear Mr. Christian:

By letter dated December 27, 2007 (Agencywide Document Access and Management System Accession No. ML080020059), Dominion Nuclear Connecticut, Inc. (DNC), the licensee, submitted relief requests for the fourth 10-year interval inservice testing (IST) program at Millstone Power Station, Unit 2 (MPS2), and for the third 10-year interval IST program at Millstone Power Station, Unit 3 (MPS3). The licensee requested relief from certain IST requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants*.

For MPS2, DNC requested the following relief requests:

1. P-001 – Categorization of Low Pressure Safety Injection Pumps as Group A/B.
2. P-002 – Use of Code Case OMN-6 for Digital Instruments.
3. V-001 – Refueling Water Storage Tank Back-leakage Valves Leakage Test Frequency.
4. V-002 - Firewater to Auxiliary Feedwater Pump Suction Header Manual Valve Test Frequency.

For MPS3, DNC requested the following relief requests:

1. P-001 – Safety Injection Pump Cooling Pump Flow Measurement.
2. P-002 – Categorization of Residual Heat Removal Pumps as Group A/B.
3. P-003 - Use of Code Case OMN-6 for Digital Instruments.
4. P-004 – Use of Code Case PMN-9 for Use of Pump Curves.
5. V-001 – Containment Recirculation Cooler Isolation Valves Exercise Frequency.

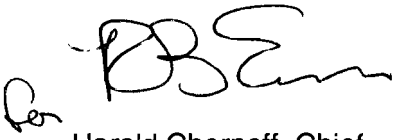
Pursuant to Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a(a)(3)(i), the NRC staff concluded in the enclosed safety evaluation that relief requests P-001, P-002, and V-001 for the MPS2 fourth 10-year IST interval, and relief requests P-002, P-003 and P-004 for the MPS3 third 10-year IST interval are authorized on the basis that the proposed alternatives provide an acceptable level of quality and safety.

Pursuant to 10 CFR 50.55a(a)(3)(ii), the staff concluded in the enclosed safety evaluation that relief request V-002 for the MPS2 fourth 10-year interval, and relief requests P-001 and V-001

for the MPS3 third 10-year IST interval are authorized on the basis that that the proposed alternative would provide reasonable assurance of pump and valve operability and compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety.

If you have any questions, please contact Carleen Sanders at 301-415-1603.

Sincerely,



Harold Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-336 and 50-423

Enclosure: As stated

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELIEF REQUESTS RELATED TO THE INSERVICE TESTING PROGRAM

DOMINION NUCLEAR CONNECTICUT, INC.

MILLSTONE POWER STATION UNITS 2 AND 3

DOCKET NUMBERS 50-336 AND 50-423

1.0 INTRODUCTION

By letter dated December 27, 2007 (Agencywide Document Access and Management System Accession No. ML080020059), Dominion Nuclear Connecticut, Inc. (DNC), the licensee, submitted relief requests for the fourth 10-year interval inservice testing (IST) program at Millstone Power Station Unit 2 (MPS2), and for the third 10-year interval IST program at Millstone Power Station Unit 3 (MPS3). The licensee requested relief from certain IST requirements of the American Society of Mechanical Engineers (ASME) *Code for Operation and Maintenance of Nuclear Power Plants* (OM Code). The fourth 10-year IST interval for MPS2 and third 10-year IST interval for MPS3 begins on December 2, 2008. The U.S. Nuclear Regulatory Commission (NRC) staff evaluation of the relief requests is contained herein.

2.0 REGULATORY EVALUATION

Title 10 of the *Code of Federal Regulations* (10 CFR), Section 50.55a, requires that IST of certain ASME Code Class 1, 2, and 3 pumps and valves be performed at 120-month (10-year) IST program intervals in accordance with the specified ASME Code and applicable addenda incorporated by reference in the regulations, except where alternatives have been authorized or relief has been requested by the licensee and granted by the NRC pursuant to paragraphs (a)(3)(i), (a)(3)(ii), or (f)(6)(i) of 10 CFR 50.55a. In accordance with 10 CFR 50.55a(f)(4)(ii), licensees are required to comply with the requirements of the latest edition and addenda of the ASME Code incorporated by reference in the regulations 12 months prior to the start of each 120-month IST program interval. In accordance with 10 CFR 50.55a(f)(4)(iv), IST of pumps and valves may meet the requirements set forth in subsequent editions and addenda that are incorporated by reference in 10 CFR 50.55a(b), subject to NRC approval. Portions of editions or addenda may be used provided that all related requirements of the respective editions and addenda are met. In proposing alternatives or requesting relief, the licensee must demonstrate that: (1) the proposed alternatives provide an acceptable level of quality and safety; (2) compliance would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety; or (3) conformance is impractical for the facility. Section 50.55a authorizes the NRC to approve alternatives and to grant relief from ASME OM Code requirements upon making necessary findings. NRC guidance contained in Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," provides alternatives to ASME Code requirements which are acceptable. Further guidance is given in GL 89-04, Supplement 1, and NUREG-1482 Revision 1, "Guidelines for Inservice Testing at Nuclear Power Plants."

The NRC's findings, with respect to granting or denying the IST program relief requests, are provided below.

3.0 EVALUATION OF MILLSTONE UNIT 2 RELIEF REQUESTS

3.1 Pump Relief Request P-001

Code Requirements

ISTB-1300 requires that all IST pumps shall be categorized as either a Group A or Group B pump.

ISTB-2000 defines Group A pumps as "pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations;" and Group B pumps as "pumps in standby systems that are not operated routinely except for testing."

ISTB-1400(b) states that "a pump that meets both Group A and Group B pump definitions shall be categorized as a Group A pump."

The licensee requested relief from the above ASME OM Code Pump Categories requirements for the Low Pressure Safety Injection (LPSI) pumps, P-42A and P-42B.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> Pursuant to 10 CFR 50.55a, "Codes and Standards," Paragraph (a)(3)(i), relief is requested from the requirement of ASME OM Code ISTB-1400(b). This relief will result in testing the LPSI pumps as Group B during power operations versus Group A. This proposed relief will result in a lower potential for pump degradation due to pump wear while still being capable of measuring pump performance. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.
>
> The LPSI pumps meet the categorization requirements of Group A pumps in that they are operated routinely during plant shutdowns and refueling outages. However, these pumps also meet the requirements of Group B, in that during normal operation (reactor critical) they are not operated except for testing.
>
> These pumps are centrifugal type pumps required for LPSI and to provide reactor core cooling during the cooldown phase of shutdown cooling. During normal power operations, the LPSI pump is in a standby condition and is considered an essential part of the Emergency Core Cooling System (ECCS). The pump starts automatically upon receipt of a safety injection [SI] signal taking suction from the Refueling Water Storage Tank (RWST) during the injection phase of an accident. [The pump is then aligned to take suction from the

containment sump during the recirculation phase of an accident.] The pump discharges to the Reactor Coolant System (RCS).

ASME [OM Code] ISTB-1400(b) states that if a pump meets both Group A and Group B definitions, it shall be categorized as a Group A pump. The LPSI pumps are currently tested during normal operation, using the minimum flow recirculation loop.

The design flow rate of the LPSI Pumps is 3000 gpm [gallons per minute]. This flow rate can only be achieved during shutdown periods when injection into the RCS at a reduced pressure is possible.

Classifying these pumps as Group B during power operation minimizes the time required to perform quarterly testing. The 2001/2003 ASME Code testing requirements eliminate the two-minute minimum pump run-time for quarterly Group B pump tests. Eliminating the minimum pump run-time requirement and the requirement to record flow and vibration levels is expected to reduce the length of each quarterly pump test and accompanying unavailability time for these pumps. Since these pumps are not operated routinely during plant operation, except for required surveillance testing, there is no time or wear related degradation mechanism that would warrant performing more detailed quarterly tests on the LPSI pumps.

NUREG/CP-0137, Vol. 1, Proceedings of the Third NRC/ASME Symposium on Valve and Pump Testing, includes a paper entitled, "Description of Comprehensive Pump Test Change to ASME Code, Subsection ISTB," This paper details the philosophy of classifying pumps as Group A or Group B. According to the author, the intent of having different test requirements for different pump groups is to relate the requirements for the amount and degree of quarterly performance monitoring to the amount of degradation expected based on pump operation.

Testing the LPSI pumps quarterly as Group A pumps during power operation is contrary to the philosophy of the referenced paper. Quarterly Group A testing subjects these pumps to increased test requirements and performance monitoring. Also, this testing introduces the potential for more degradation due to pump wear (caused by low-flow operation) at the time when they are standby purnps and would not otherwise be subject to operation-induced degradation. Group A testing during power operation may be more detrimental to the long-term health of these components than Group B testing.

Licensee's Proposed Alternative Testing

[DNC] proposes that the LPSI pumps (P-42A and P-42B) be tested as standby pumps (Group B) during power operation and as continuously operating pumps (Group A) during cold shutdown and refueling operations. During refueling operations, the comprehensive pump test (CPT) may be substituted for a quarterly Group A test that comes due. DNC further proposes that at any time a

CPT is performed, the code-required quarterly low-flow test (Group B) requirement may be deleted for that quarter.

NRC Staff Evaluation

ISTB-2000 of the OM Code defines Group A pumps as, "pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations," and Group B pumps as, "pumps in standby systems that are not operated routinely except for testing." ISTB-1400(b) requires a pump that meets both Group A and Group B definitions to be categorized as a Group A pump.

The LPSI pumps clearly meet the definition of Group A pumps in that they are operated routinely during plant shutdowns and refueling outages, and these pumps also meet the requirements of Group B, in that during normal operation they are not operated except for testing. According to ISTB-1400(b), these LPSI pumps should be categorized as Group A pumps and tested in accordance with ISTB-5100 and ISTB-5120. However, because of the inability to achieve a substantial flow rate in Modes 1 through 4, it is not possible to conduct a Group A test that would provide much meaningful data to detect degradation due to the relatively flat profile of the pump hydraulic curve and the higher vibration levels present at these near shut-off head flow conditions. Additionally, the LPSI pumps are standby pumps during Modes 1 through 4 and little degradation is expected with respect to hydraulic performance during the operational period when the pumps are idle. Therefore, the licensee proposes that the LPSI pumps be tested as standby pumps (Group B) during Modes 1 through 4 and as continuously operating pumps (Group A) during Modes 5 and 6. In Mode 5, the CPT may be substituted for a quarterly Group A test that comes due during a mid-cycle cold shutdown period as provided by the OM Code, Subsection ISTB. The Code Paragraph ISTB-5000 states that when a Group A test is required, a CPT may be substituted.

Requiring the LPSI pumps to be tested quarterly as Group A pumps during normal operation in Modes 1 through 4 would subject the LPSI pumps to increased test requirements, performance monitoring, and potentially more degradation due to low-flow operation at the time when they are standby pumps and would not otherwise be subject to operation-induced degradation. In fact, out of all of the ECCS and auxiliary feedwater (AFW) pumps, the LPSI pumps are the ones, due to their design and test conditions, for which the detrimental effects of cumulative low-flow operation are the most drastic. Therefore, the requirement to test the LPSI pumps as Group A pumps during normal operation in Modes 1 through 4 may be potentially detrimental on a long-term basis.

As previously stated, the LPSI pumps are typically run continuously during cold shutdown and refueling operations, depending on the decay heat rate. As a result, they may be subject to operation-induced degradation in Modes 5 and 6. Therefore, the LPSI pumps will be treated as Group A pumps during any quarterly test that comes due during cold shutdown or refueling operations. However, typically during Modes 5 and 6, a CPT is preferable to a Group A test for the LPSI pumps. This avoids the need to realign the LPSI pumps out of the normal shutdown cooling line-up and also avoids the detrimental effects of testing the LPSI pumps at low-flow conditions. Therefore, DNC expects that a CPT may be substituted for any Group A or Group B test that may be required during Modes 5 and 6, and further states that at any time a CPT is performed, the Code-required quarterly low-flow test (Group B) may be deleted for that quarter.

In Generic Letter (GL) 89-04, "Guidance on Developing Acceptable Inservice Testing Programs," (ADAMS Accession No. ML031150259), Position 9, the NRC determined that, in cases where flow can only be established through a non-instrumented, minimum-flow path during quarterly pump testing, and a path exists at cold shutdown or refueling outages to perform a test of the pump under full or substantial flow conditions, the increased interval for flow measurement is an acceptable alternative to the Code requirements. Therefore, the NRC staff finds that the proposed alternative testing of the LPSI pumps as Group B during operation, and as Group A during cold shutdown and refueling operations is also consistent with GL 89-04, Position 9, and provides an acceptable level of quality and safety.

Conclusion

The NRC staff concludes that the licensee's proposed alternative of testing the LPSI pumps as Group B during power operation, and as Group A during cold shutdown and refueling operations is authorized pursuant to 10 CFR 50.55a(a)(3)(i), based on that the alternative provides an acceptable level of quality and safety. This alternative is authorized for MPS2 fourth 10-year IST interval.

3.2 Pump Relief Request P-002

Code Requirements

ISTB-3510(b)(2) states that digital instruments shall be selected such that the reference value does not exceed 70-percent of the calibrated range of the instrument.

The licensee requested relief from the above ASME OM Code requirements for digital instruments and proposes to use ASME OM Code Case OMN-6.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> By using Code Case OMN-6, greater flexibility in the selection of instruments would be achieved, thus preventing the installation of multiple instruments to monitor the same parameter during testing. Digital instruments will be selected such that the reference value does not exceed 90% [percent] of the calibrated range of the instrument.
>
> NUREG-1482, Revision 1, Section 5.5 [Pump Flow Rate and Differential Pressure Instruments] states that ..."The NRC has accepted Code Case OMN-6 as specified in [Regulatory Guide] 1.192, which allows each digital instrument to be such that the reference values do not exceed 90 percent of the calibrated range of the instrument."

Use of Code Case OMN-6, approved by the NRC in Regulatory Guide 1.192, will provide at least equivalent instrumentation accuracy requirements for the required pump testing parameters to be measured in the IST program and will provide results consistent with code requirements. This will provide adequate assurance of acceptable pump performance.

Alternative Testing

The licensee is proposing to use in its fourth 10-year interval IST program digital instruments where the reference value does not exceed 90-percent of the calibrated range of the instrument.

NRC Staff Evaluation

The licensee requested relief from ASME OM Code paragraph ISTB-3510(b)(2), which states that digital instruments shall be selected such that the reference value does not exceed 70-percent of the calibrated range of the instrument.

The licensee proposes to use ASME OM Code Case OMN-6 for its fourth 10-year interval IST program. Code Case OMN-6 allows the use of digital instruments where the reference value does not exceed 90-percent of the calibrated range of the instrument. The licensee's IST program is based upon the 2001 Edition through the 2003 addenda of the OM Code, and the Code Case OMN-6 contained in this edition expired on March 30, 2004.

Code Case OMN-6 was reaffirmed in the 2006 Addenda to the 2004 Edition of the OM Code with a new expiration date of March 30, 2008. This reaffirmed Code Case OMN-6 was modified to reference the 1998 Edition up to and including OMa-2005 Addenda of the Code. Application of ASME OM Code cases is also addressed in 10 CFR 50.55a(b)(6) through reference to RG 1.192, which lists acceptable and conditionally acceptable Code Cases for implementation in IST programs. RG 1.192, Table 1, approves the use of Code Case OMN-6 in lieu of provisions for digital instruments used in ISTB-3510(b)(2) of the ASME OM Code. There is no technical reason for prohibiting the use of Code Case OMN-6 with the 2001 Edition through 2003 Addenda. Therefore, the NRC staff finds that use of Code Case OMN-6 is consistent with RG 1.192 and the ASME OM Code, and provides an acceptable level of quality and safety for testing of pumps.

Conclusion

The NRC staff concludes that the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternative provides an acceptable level of quality and safety for pump testing. This alternative is authorized for MPS2 fourth 10-year IST interval.

3.3 Valve Relief Request V-001

Code Requirements

ISTC-3630 states that Category A valves with a leakage requirement not based on an owner's 10 CFR 50, Appendix J program, shall be tested to verify their seat leakages within acceptable limits. ISTC-3630(a) requires that the leakage tests shall be conducted at least once every 2 years.

The licensee proposes to extend the surveillance interval for seat leakage testing of Code Class 2, Category A or A/C valves located in the High Pressure Safety Injection System, Containment Spray System, and RWST System. The specific valves included in this relief request are as follows:

- 2-CS-14A/B,
- 2-CS-050,
- 2-CS-051,
- 2-SI-459,
- 2-SI-460,
- 2-SI-659, and
- 2-SI-660.

These valves are required to close or remain closed to prevent back-leakage to the RWST during the recirculation phase of a loss-of-coolant accident (LOCA).

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> These valves are required to close or remain closed to prevent back-leakage to the Refueling Water Storage Tank (RWST) during the recirculation phase of a Loss-of-Coolant-Accident (LOCA). The subject valves function as a system during the sump recirculation phase of a LOCA to prevent backflow into the RWST, thus, limiting the potential for release of radioactivity from containment to the atmosphere. The RWST is vented to atmosphere. The total allowed leakage limit and thus assumed release from this system of valves, is based on the calculated site boundary dose limits and control room habitability limits. Individual leak rates of the subject valves can vary as long as the total back-leakage from the valves into RWST is maintained within the assumed calculation limits.
>
> Administrative leakage limits have been calculated for each of the subject valves. Measured leakages have been well below the administrative limits over the past several tests. This data indicates reasonable assurance that the valves will perform their intended function, and that leakage rates will not exceed the

administrative limits from test to test. Therefore, extension of the test frequency is warranted.

Seat leakage testing of these valves requires draining/venting of radioactive fluid and the processing of significant amounts of contaminated water (radwaste) to perform the required test. In addition, radiological exposure (approximately 50 millirem per person) will be accumulated for test personnel. Performance of the seat leakage tests each refueling outage has a significant impact on outage schedule and resources.

Testing of 2-SI-460 requires a freeze seal be established on a 6-inch header piping. . . . This task requires significant planning and coordination to ensure safe working conditions are maintained.

The train-specific valves, 2-CS-14A and 2-CS-14B are tested by involving a significant amount of system tagging and unavailability of both trains of RWST supply. MPS2 refueling outages are scheduled to concentrate work on the out-of-service train, while protecting the in-service train, thus maintaining adequate shutdown risk safety margins. This relief would therefore result in testing being performed on only the out-of-service train, minimizing work on the protected train.

Alternative Testing

[DNC] proposes that the subject valves be exempt from the 2-year leak test frequency requirement of ISTC-3630(a) for Category A valves whose closing function prevents back-leakage to the RWST during post-LOCA sump recirculation and tested as follows:

- 2-CS-14A/B will be tested every other refueling
- The remainder of these valves will be tested every 60 months
- Test frequencies will be doubled upon failure of administrative criteria until two successive acceptable tests are recorded

NRC Staff Evaluation

Historical leak-test results for each of these valves show measured leakages far below MPS2 administrative limits over a period of 9 years. Measured leakages are, in most cases, an order of magnitude less than the administrative limits. The previous testing and test data support the conclusion that it is reasonable to extend the time period between tests. In addition, these valves are secondary containment isolation valves, and Option B to Appendix J of 10 CFR 50 is applicable to these valves. Option B of Appendix J allows leak testing of containment isolation valves on a performance-based frequency of up to 5 years. The licensee proposed alternative is consistent with Option B of Appendix J and is, therefore, acceptable.

Conclusion

The proposed alternative to perform leak testing of valves 2-CS-14A/B, 2-CS-050, 2-CS-051, 2-SI-459, 2-SI-460, 2-SI-659, and 2-SI-660 on extended interval is consistent with Option B of Appendix J, and provides an acceptable level of quality and safety. Therefore, pursuant to 10 CFR 50.55a(a)(3)(i), Relief Request V-001 is authorized for MPS2 fourth 10-year IST interval.

3.4 Valve Relief Request V-002

Code Requirements

ISTC-3540 requires that manual valves be full stroke exercised at least once every 5 years. 10 CFR 50.55a(b)(3)(vi) reduces the frequency from 5-years to 2-years.

The licensee has requested relief from the full stroke exercise requirements of ISTC-3540 for manually operated gate valves 2-FIRE-94A/B/C which isolate the fire water system from the auxiliary feedwater (AFW) system. The licensee proposes to place these valves in a sample exercise program and exercise one valve each refueling outage.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> The normally closed 6-inch manually operated gate valves serve as the Fire Water/Auxiliary Feedwater (AFW) system boundary valves. The normally isolated firewater system provides an alternate source of water to the AFW pumps during long-term cooling in the event the normal condensate storage tank (CST) supply is depleted. An 8-inch firewater header supplies the three, parallel 6-inch lines, one for each of the three AFW pumps, which tie directly into the normal AFW pump suction paths from the CST. There is no drain path available between the 8-inch header and the three 6-inch isolation valves.
>
> Manual full stroke testing is a burden since the firewater discharge flow path goes directly to the suction of the AFW pumps and cycling the valves would result in chemical and particulate contamination of the AFW system and/or CST. As a result, a spool piece in each AFW pump must be removed and the fire water routed away from the AFW system using temporary piping. This involves significant maintenance preparation and restoration activities, including temporary piping modifications, proper disposal of the chlorinated firewater, and extensive system flushing required after each valve cycle to insure the AFW system does not become contaminated when restored. One motor-driven AFW pump is required to be available during outage to supply emergency makeup to the spent fuel pool. Cycling of all three valves at each refueling would negatively impact the outage schedule and the availability of AFW pumps to support this function. There have been no identified problems from historical testing of these valves during the third 10-year interval.

Alternative Testing

> [DNC] proposes testing 2-FIRE-94A/B/C on a sample frequency of one valve in the group each refueling outage. These valves are the same size and model from the same manufacturer, and are installed in the same application and orientation, meeting the grouping methodology allowed in NUREG-1482 for check valve testing. One valve in the group will be manually full-stroked every refueling outage, and all the valves in the group will be manually full-stroked within three refueling outages. If any valve is incapable of being manually full-stroked exercised, the remaining valves in the group will be manually full-stroke tested in the same refueling outage. A full stroke exercise test will be performed after any maintenance that could affect the full-stroke capability of the valve.

NRC Staff Evaluation

The three fire water valves isolate the fire water from the suction supply of the AFW system. According to the Final Safety Analysis Report (FSAR), the operators can connect the fire water system to the AFW pump suctions in the event that the CST becomes depleted and cannot be replenished by normal makeup. In order to exercise each fire water valve without contaminating the AFW system with fire water, the flow path from the CST is isolated and a spool piece is removed between the AFW pump and the fire water isolation valve. A blind flange with a fire hose fitting is attached to the line. The fire hose is connected to the fitting and then run to a drain approximately 300 feet from the connection. When the valve is exercised, the water in the line is diverted through the fire hose to the drain. There are no existing valves in the fire water or AFW suction lines that facilitate exercising these valves.

Because of the hardship of testing all the affected valves, the licensee is requesting that the testing interval be increased to three refueling outages for each valve. The exercise of each valve will be performed on a staggered basis with one valve being tested each refueling outage. In the event that a valve selected for testing during a refueling outage is not capable of being exercised to its safety position, the other two valves will be exercised during the same refueling outage. In addition, a valve will be exercised to its safety position after any maintenance that could affect the capability of the valve to perform its safety function. The licensee's proposal to exercise these valves on a sampling basis is similar to the philosophy for disassembly and inspection of check valves of Position 2 of GL 89-04. The licensee stated that all three valves are of the same size, manufacturer and model number. In addition, these valves are oriented in the same position and see identical service conditions. All three valves were successfully exercised in May of 2000. There have been no identified problems from historical testing of these valves during the third 10-year interval. The licensee has reviewed the work history of these valves from 1985 to the present and no issues were identified.

Based on the fact that exercising each valve every refueling outage requires significant effort to configure the system for the exercise, the NRC staff finds that compliance with the current Code requirements results in hardship without a compensating increase in the level of quality and safety. Although the proposed testing increases the exercise interval of each valve to three refueling outages, the NRC staff finds that the proposed alternative provides reasonable assurance of operational readiness, because the testing is performed on a staggered basis and the review of the work history of these valves has not identified any issues. In addition, the

proposed alternative is consistent with the philosophy of GL 89-04, Position 2, regarding sample disassembly and inspection of check valves. Finally, the licensee has committed to: (1) exercise the other two valves during the same refueling outage if a valve selected for testing is not capable of being exercised to its safety position; and (2) exercise a valve to its safety position after any maintenance that could affect the capability of the valve to perform its safety function.

Conclusion

The proposed alternative, to exercise the manually operated gate valves 2-FIRE-94A/B/C once every three refueling outages on a staggered basis, is authorized, pursuant to 10 CFR 50.55a(a)(3)(ii), for MPS2 fourth 10-year IST interval on the basis that the proposed alternative provides reasonable assurance of the operational readiness of the valves, and compliance with the Code requirements results in a hardship without a compensating increase in the level of quality and safety.

4.0 EVALUATION OF MILLSTONE UNIT 3 RELIEF REQUESTS

4.1 Pump Relief Request P-001

Code Requirements

ISTB 5122 for Group B pump test requires that the test parameter values identified in Table ISTB-3000-1 shall be determined and recorded, and ISTB 5123 for comprehensive pump test (CPT) requires that the test parameter value identified in Table ISTB-3000-1 shall be determined and recorded.

The licensee requests relief from total flow measurement requirements for Safety Injection Pump Cooling (CCI) Pumps 3CC*P1A/1B.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> The CCI system is designed to provide 9.5 gpm cooling flow to the Safety Injection Pump Lube Oil cooler. Since the original design flow was approximately 21 gpm and the pump rated flow is 25 gpm, the minimum flow recirculation line was designed with an orifice sized to pass 15 gpm. However, the minimum recirculation lines were not designed to allow flow measurement with either permanent or temporary instrumentation that would meet ASME Code requirements. The total length of straight pipe for the 3CCI*P1A and 3CCI*P1B recirc [recirculation] lines is approximately 28 inches and 21 inches, respectively, which is insufficient length to install flow measurement equipment. These lines were not designed to be isolated. [Without the ability to isolate the minimum flow recirculation lines or to measure flow directly, the majority of CCI pump flow can not be measured during IST pump testing.]

Given the associated hardship, monitoring the minimum recirculation line flow rate does not provide a compensating increase in the level of quality or safety for the following reasons:

1. Without the ability to isolate the minimum flow recirculation lines or to measure flow directly, the majority of CCI pump flow cannot be measured without implementing system design modification.

2. Any increase in recirculation flow (i.e., increase in orifice size) would result in a reduction in pump differential pressure which would be conservatively identified as pump degradation.

3. A complete obstruction of the unmonitored recirculation flow could only increase pump differential [pressure] (i.e., mask pump degradation) by an amount less than 3.7% [percent] because the pump head versus flow characteristics are relatively flat over the normal operating range for these pumps.

Alternative Testing

During IST pump tests, both the quarterly Group B and biennial CPT, the system will be throttled to a reference flow of 10 gpm ±0.2 gpm with an unmonitored recirculation flow of approximately 15 gpm. The pump differential pressure will then be recorded and compared to a more stringent acceptance criteria of 94-percent for both the Group B and CPT tests.

NRC Staff Evaluation

The pumps, 3CCI*P1A and 3CCI*P1B, are in the CCI system. Their function is to provide 9.5 gpm of cooling water flow to the safety injection pump lube oil cooler. The OM Code allows a specific percentage of degradation of pump hydraulic performance from an established reference value before action must be taken. During the IST test, the OM Code requires the pump flow be determined and recorded.

CCI pump flow can only be determined on the main flow path and approximately 15 gpm recirculation flow is unmonitored. The minimum recirculation lines were not designed to allow flow measurement with either permanent or temporary instrumentation that would meet ASME Code requirements. The total length of straight pipe for the 3CCI*P1A and 3CCI*P1B recirculation lines is approximately 28 inches and 21 inches, respectively, which is insufficient length to install flow measurement equipment. Neither of these lines was designed to be isolated. Therefore, without the ability to isolate the minimum flow recirculation lines or to measure flow directly, the total CCI pump flow cannot be determined during pump IST. Compliance with the Code requirements for total flow measurement would require major system modification including installation of flow measuring devices and additional piping. As such, the licensee proposes, for both the quarterly Group B and biennial CPT test, that the system will be throttled to a reference flow of 10 gpm ±0.2 gpm with an unmonitored recirculation flow of approximately 15 gpm. The pump differential pressure will then be recorded and compared to a modified acceptance criteria from the ASME Code lower range of 0.90 to a revised 0.94 for both Group B and CPT. No changes are proposed for higher ranges.

Since the pump head versus flow characteristics are relatively flat over the normal operating range for the affected pumps, the change in pump differential pressure from the rated flow to the shutoff head condition is approximately 3.7-percent. As a result, a complete obstruction of recirculation flow could only increase pump differential pressure (mask pump degradation) by an amount less than 3.7-percent. DNC proposes to modify the lower acceptance criteria from 0.90 to 0.94 to account for a complete obstruction of recirculation flow of approximately 15 gpm. For both quarterly Group B and biennial CPT tests, the licensee will establish 10 gpm of main flow as a reference point and utilize pump differential pressure as an alternative measure of pump degradation at the rated flow of 25 gpm. The measured differential pressure data are then compared to the modified acceptance criteria of 0.94, which is 4-percent more restrictive than that required by the Code. On the other hand, any increase in recirculation flow, e.g., by increase in orifice size, would result in higher total pump flow and thereby a reduction in pump differential pressure, which would be conservatively identified as pump degradation. Therefore, the proposed alternative will provide reasonable assurance of the operational readiness for the affected pumps, and compliance with the Code requirements would result in a hardship without a compensating increase in the level of quality and safety.

Conclusion

Based on the above evaluation, Relief Request P-001 is authorized, pursuant to 10 CFR 50.55a(a)(3)(ii), for MPS3 third 10-year IST interval on the basis that the proposed alternative provides reasonable assurance of pump operational readiness and that compliance with the Code requirements results in a hardship without a compensating increase in the level of quality and safety.

4.2 Pump Relief Request P-002

Code Requirements

ISTB-1300 requires that all IST pumps shall be categorized as either a Group A or Group B pump.

ISTB-2000 defines Group A pumps as "pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations;" and Group B pumps as "pumps in standby systems that are not operated routinely except for testing."

ISTB-1400(b) states that "a pump that meets both Group A and Group B pump definitions shall be categorized as a Group A pump."

The licensee requested relief from the above ASME OM Code Pump Categories requirements for the Residual Heat Removal (RHR) pumps, 3RHS*P-1A and P-1B.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (a)(3)(i), relief is requested from the requirement of ASME OM Code ISTB-1400(b). This relief will result in testing the RHR pumps as Group B during power operations versus Group A. This proposed relief will result in a lower potential for pump degradation due to pump wear while still being capable of measuring pump performance. The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The RHR pumps meet the categorization requirements of Group A pumps in that they are operated routinely during plant shutdowns and refueling outages. However, these pumps also meet the requirements of Group B, in that during normal operation (reactor critical) they are not operated except for testing.

These pumps are centrifugal type pumps required for low head safety injrection and to provide reactor core cooling during the cooldown phase of shutdown cooling. During normal power operations, the RHR pump is in a standby condition and is considered an essential part of the Emergency Core Cooling System (ECCS). The pump starts automatically upon receipt of a safety injection signal taking suction from the Refueling Water Storage Tank (RWST) during the injection phase of an accident. The pump discharges to the Reactor Coolant System (RCS). ASME ISTB-1400(b) states that if a pump meets both Group A and Group B definitions, it shall be categorized as a Group A pump. The RHR pumps are currently tested during normal operation, using the minimum flow recirculation loop.

The design accident flow rate of each RHR Pump is approximately 4000 gpm. This flow rate can only be achieved during shutdown periods when injection into the RCS at a reduced pressure is possible.

Classifying these pumps as Group B during power operation minimizes the time required to perform quarterly testing. The 2001/2003 ASME Code testing requirements eliminate the two-minute minimum pump run-time for quarterly Group B tests. Eliminating the minimum pump run-time requirement and the requirement to record flow and vibration levels is expected to reduce the length of each quarterly pump test and accompanying unavailability time for these pumps. Since these pumps are not operated routinely during plant operation, except for required surveillance testing, there is no time or wear related degradation mechanism that would warrant performing more detailed quarterly tests on the RHR pumps.

NUREG/CP-0137, Vol. 1, Proceeding of the Third NRC/American Society of Mechanical Engineers (ASME) Symposium on Valve and Pump Testing, includes a paper entitled, "Description of Comprehensive Pump Test Change to ASME Code, Subsection ISTB." This paper details the philosophy of classifying pumps as Group A or Group B. According to the author, the intent of having different test requirements for different pump groups is to relate the requirements for the

amount and degree of quarterly performance monitoring to the amount of degradation expected based on pump operation.

Testing the RHR pumps quarterly as Group A pumps during power operation is contrary to the philosophy of the referenced paper. Quarterly Group A testing subjects these pumps to increased test requirements and performance monitoring. Also, this testing introduces the potential for more degradation due to pump wear (caused by low-flow operation) at the time when they are standby pumps and would not otherwise be subject to operation-induced degradation. Group A testing during power operation may be more detrimental to the long-term health of these components than Group B testing.

Licensee's Proposed Alternative Testing

[DNC] proposes that the RHR pumps (3RHS*P-1A and P-1B) be tested as standby pumps (Group B) during power operation and as continuously operating pumps (Group A) during cold shutdown and refueling operations. During refueling operations, the CPT may be substituted for a quarterly Group A test that comes due. DNC further proposes that at any time a CPT is performed, the code-required quarterly low-flow test (Group B) requirement may be deleted for that quarter.

NRC Staff Evaluation

ISTB-2000 of the OM Code defines Group A pumps as, "pumps that are operated continuously or routinely during normal operation, cold shutdown, or refueling operations," and Group B pumps as, "purnps in standby systems that are not operated routinely except for testing." ISTB-1400(b) requires that a pump that meets both Group A and Group B definitions shall be categorized as a Group A pump.

The RHR pumps clearly meet the definition of Group A pumps in that they are operated routinely during plant shutdowns and refueling outages, and these pumps also meet the requirements of Group B, in that during normal operation they are not operated except for testing. According to ISTB-1400(b), these RHR pumps should be categorized as Group A pumps and tested in accordance with ISTB-5100 and ISTB-5120. However, because of the inability to achieve a substantial flow rate in Modes 1 through 4, it is not possible to conduct a Group A test that would provide very much meaningful data to detect degradation due to the relatively flat profile of the pump hydraulic curve and the higher vibration levels present at these near shut-off head flow conditions. Additionally, the RHR pumps are standby pumps during Modes 1 through 4 and little degradation is expected with respect to hydraulic performance during the operational period when the pumps are idle. Therefore, the licensee proposes that the RHR pumps be tested as standby pumps (Group B) during Modes 1 through 4 and as continuously operating pumps (Group A) during Modes 5 and 6. In Modes 5 and 6, the CPT may be substituted for a quarterly Group A test that comes due during a mid-cycle cold shutdown period as provided by the OM Code, Subsection ISTB. The Code Paragraph ISTB-5000 states that when a Group A test is required, a CPT may be substituted.

Requiring the RHR pumps to be tested quarterly as Group A pumps during normal operation in Modes 1 through 4 would subject the RHR pumps to increased test requirements, performance monitoring, and potentially more degradation due to low-flow operation at the time when they are standby pumps and would not otherwise be subject to operation-induced degradation. Therefore, Group A testing during power operation may be more detrimental to the long-term health of these components than Group B testing.

In GL 89-04, Position 9, the NRC determined that, in cases where flow can only be established through a non-instrumented, minimum-flow path during quarterly pump testing, and a path exists at cold shutdown or refueling outages to perform a test of the pump under full or substantial flow conditions, the increased interval for flow measurement is an acceptable alternative to the Code requirements. Therefore, the NRC staff finds that the proposed alternative testing of the RHR pumps as Group B during operation, and as Group A during cold shutdown and refueling operations is also consistent with GL 89-04, Position 9, and provides an acceptable level of quality and safety.

Conclusion

Based on the above evaluation, the NRC staff concludes that the licensee's proposed alternative testing of the RHR pumps as Group B during power operation, and as Group A during cold shutdown and refueling operations is authorized pursuant to 10 CFR 50.55a(a)(3)(i), based on the alternative providing an acceptable level of quality and safety. This alternative is authorized for MPS3 third 10-year IST interval.

4.3 Pump Relief Request P-003

Code Requirements

ISTB-3510(b)(2) states that digital instruments shall be selected such that the reference value does not exceed 70-percent of the calibrated range of the instrument.

The licensee requested relief from the above ASME OM Code requirements for digital instruments and proposes to use ASME OM Code Case OMN-6.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> By using Code Case OMN-6, greater flexibility in the selection of instruments would be achieved, thus preventing the installation of multiple instruments to monitor the same parameter during testing. Digital instruments will be selected such that the reference value does not exceed 90 percent of the calibrated range of the instrument.

NUREG-1482, Revision 1, Section 5.5 states that...."The NRC has accepted Code Case OMN-6 as specified in Reg Guide [RG] 1.192, which allows each digital instrument to be such that the reference values do not exceed 90 percent of the calibrated range of the instrument."

Use of Code Case OMN-6, approved by the NRC in Reg Guide 1.192, will provide at least equivalent instrumentation accuracy requirements for the required testing parameters to be measured in the IST program and will provide results consistent with code requirements. This will provide adequate assurance of acceptable pump performance.

Licensee's Proposed Alternative Testing

The licensee is proposing to use in its third 10-year interval IST program digital instruments where the reference value does not exceed 90-percent of the calibrated range of the instrument.

NRC Staff Evaluation

The licensee requested relief from ASME OM Code paragraph ISTB-3510(b)(2), which states that digital instruments shall be selected such that the reference value does not exceed 70-percent of the calibrated range of the instrument.

The licensee proposes to use ASME OM Code Case OMN-6 for its third 10-year interval IST program. Code Case OMN-6 allows the use of digital instruments where the reference value does not exceed 90-percent of the calibrated range of the instrument. The licensee's IST program is based upon the 2001 Edition through the 2003 Addenda of the OM Code, and the Code Case OMN-6 contained in this edition expired on March 30, 2004.

Code Case OMN-6 was reaffirmed in the 2006 Addenda to the 2004 Edition of the OM Code with a new expiration date of March 30, 2008. This reaffirmed Code Case OMN-6 was modified to reference the 1998 Edition up to and including OMa-2005 Addenda of the Code. Application of ASME OM Code cases is also addressed in 10 CFR 50.55a(b)(6) through reference to RG 1.192, which lists acceptable and conditionally acceptable Code Cases for implementation in IST programs. RG 1.192, Table 1, approves the use of Code Case OMN-6 in lieu of provisions for digital instruments used in ISTB-3510(b)(2) of the ASME OM Code. There is no technical reason for prohibiting the use of Code Case OMN-6 with the 2001 Edition through 2003 Addenda. Therefore, the NRC staff finds that use of Code Case OMN-6 is consistent with RG 1.192 and the ASME OM Code, and provides an acceptable level of quality and safety for testing of pumps.

Conclusion

Based on the above evaluation, the NRC staff concludes that the licensee's proposed alternative is authorized pursuant to 10 CFR 50.55a(a)(3)(i) on the basis that the proposed alternative provides an acceptable level of quality and safety for testing of the pumps. This alternative is authorized for MPS3 third 10-year IST interval.

4.4 Pump Relief Request P-004

Code Requirements

ISTB-5121 requires that Group A tests shall be conducted with the pump operating at a specified reference point.

The licensee requested relief for Reactor Building Closed Cooling Water (CCP) pumps, 3CCP*1A/1B/1C from the above ASME OM Code requirements for pump testing and proposes to use ASME OM Code Case OMN-9, which allows the use of a pump curve for inservice testing of pumps.

Licensee's Basis for Relief Request

> The CCP pumps provide cooling flow for heat removal for the Nuclear Steam Supply System (NSSS) supplied equipment and Balance of Plant (BOP) equipment
>
> Two CCP pumps are required to be operable in Modes 1 through 4. Testing of the third pump requires manipulation of two trains of CCP to balance flow rates and reduces the chance of lifting a pressure relief valve.
>
> Performance of a Group A test while in normal plant configuration will eliminate the need to start the third pump and balance flows between trains.

Licensee's Proposed Alternative Testing

> The CCP pumps will be tested in a range of flows, and the results will be compared to acceptance criteria based on a portion of the pump curve and the hydraulic acceptance criteria given in ISTB. The guidelines set forth in Code Case OMN-9, "Use of a Pump Curve for Testing" will be followed. In accordance with the RG 1.192, the following elements will be incorporated into the IST procedures and curve(s) development:
>
> [1] Curves are developed, or manufacturer's pump curves are validated, when the pumps are known to be operating acceptably.
>
> [2] The reference points used to develop or validate the curves are measured using instruments at least as accurate as required by the Code.
>
> [3] Curves are based on an adequate number of data points, with a minimum of three.
>
> [4] Points are beyond the "flat" portion (low rates of the curve in a range which includes or is as close as practicable to design-basis flow rates).

[5] Acceptance criteria based on the curves does not conflict with technical specifications or facility safety analysis report operability criteria for flow rate and differential pressure for the affected pumps.

[6] If vibration levels vary significantly over the range of pump conditions, a method for assigning appropriate vibration acceptance criteria should be developed for regions of the pump curve.

[7] When the reference curve may have been affected by repair, replacement, or routine service, a new reference curve shall be determined or the previous curve revalidated by an inservice test.

NRC Staff Evaluation

The licensee requested relief from ASME OM Code paragraph ISTB-5121, which states that that Group A tests shall be conducted with the pump operating at a specified reference point.

The licensee proposes to use ASME OM Code Case OMN-9 for its third 10-year interval IST program. Code Case OMN-9 allows the use of pump curve(s) for inservice testing of pumps. Code Case OMN-9 applies to ASME OM Code 1990 Edition through the 1992 Addenda. The licensee's IST program is based upon the 2001 Edition through the 2003 addenda of the OM Code, and the current expiration date for Code Case OMN-9 is November 25, 2006.

Application of Code Case OMN-9 is addressed in 10 CFR 50.55a(b)(6) through reference to RG 1.192, which lists acceptable and conditionally acceptable Code Cases for implementation in IST programs. RG 1.192, Table 1, approves, with caveats, the use of Code Case OMN-9. Although the current expiration date for OMN-9 is November 25, 2006, there is no technical reason for prohibiting the use of Code Case OMN-9 with the 2001 Edition through 2003 Addenda. Furthermore, a new Code Case OMN-16, which is a replacement for OMN-9, is included in the OMB-2006 Addenda, and approved for use with a new expiration date of June 1, 2009. Therefore, use of Code Case OMN-9 along with proposed procedures for developing reference curves is consistent with RG 1.192 and the ASME OM Code, and provides an acceptable level of quality and safety for pump testing.

Conclusion

Based on the above evaluation, the NRC staff concludes that the licensee's proposed alternative is authorized, pursuant to 10 CFR 50.55a(a)(3)(i), on the basis that the proposed alternative provides an acceptable level of quality and safety for pump testing. This alternative is authorized for MPS3 third 10-year IST interval.

4.5 Valve Relief Request V-001

Code Requirements

ISTC-3510 requires that Active Category A, Category B, and Category C check valves shall be exercised nominally 3 months as provided by ISTC-3520, ISTC-3540, ISTC-3550, ISTC-3560, ISTC-5221, and ISTC-5222.

The licensee requested relief from the test frequency requirements of ISTC-3510, for the service water valves, 3SWP*M0V54A, MOV54B, MOV54C, and MOV54D.

Applicable Code Edition and Addenda

ASME OM Code 2001 Edition through 2003 Addenda

Licensee's Basis for Relief Request

> Testing the valves quarterly imposes undue burden on plant equipment availability, while the alternate frequencies listed in ISTC-3521 may be excessive.
>
> Testing the valves is a complex evolution requiring an interlock associated with 3SWP*MOV50A/B to be defeated (temporary modification). This action allows opening 3SWP*MOV54s without a containment depressurization actuation (CDA) signal present. Entry into Limiting Condition for Operation (LCO) 3.7.4 during Modes 1 through 4 is required for the duration the temporary modification is installed to defeat the interlock. This makes one train of Containment Recirculation Spray (RSS) and Service Water System (SWP) inoperable. When the valves are opened, service water is introduced into the RSS heat exchangers which is then required to be drained, the heat exchanger flushed with demineralized water, and drained again. This process takes approximately 8-10 hours per heat exchanger. This results in accruing a significant amount of Maintenance Rule unavailability on [the] RSS, and additional [unavailability] time on the SWP.
>
> The valves were originally scheduled for IST each cold shutdown (Modes 5 and 6). During cold shutdown, the LCO is not applicable however defeating the interlock in Modes 1 through 4 every six months to allow RSS heat exchanger flushing was evaluated and determined acceptable. . . to perform the stroke time and position indication tests without additional plant risk.
>
> Millstone committed to perform these flushes (LER 95-011-00, Letter MP-95-186) at specific times through the year to minimize the vulnerability from plantigrade attachment. The flushes are scheduled to minimize the potential for large mussel colony infestation of upstream piping and subsequent heat exchanger fouling. Ideally, the flushes would be performed in late spring and early fall. This testing, however, is less frequent than the code-specified quarterly testing. The ASME

OM Code does not identify any other frequency during power operation only deferrals to cold shutdown or refuel are permitted.

Licensee's Proposed Alternative Testing

These valves will be exercised once every six months with a 25-percent grace period to allow for scheduling flexibility.

NRC Staff Evaluation

ISTC-3510 requires that Category A and B valves be exercised to their safety position once every 3 months. In addition, the Code specifies that if the exercise tests are not practicable to perform during power operation the test may be deferred to either cold shutdowns or refueling outages.

Testing these valves during power operation would result in hardship for the licensee, and as a result, the tests were deferred to cold shutdowns in previous IST intervals. The staff finds that testing each valve twice a year is more feasible as well as comparable to a cold shutdown frequency, and hence provides reasonable assurance of the valve operability. Performing additional testing during plant operation (i.e., quarterly testing) would result in hardship without a compensating increase in the level of quality and safety.

Conclusion

Pursuant to 10 CFR 50.55a(a)(3)(ii), the proposed alternative to the valve exercise frequency requirements of ISTC-3510 for the affected valves is authorized for the MPS3 third 10-year interval on the basis that the proposed alternative provides reasonable assurance of valve operability and compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety.

5.0 CONCLUSION

Pursuant to 10 CFR 50.55a(a)(3)(i), relief requests P-001, P-002, and V-001 for MPS2 fourth 10-year IST interval, and relief requests P-002, P-003 and P-004 for MPS3 third 10-year IST interval are authorized on the basis that the proposed alternatives would provide an acceptable level of quality and safety.

Pursuant to 10 CFR 50.55a(a)(3)(ii), relief request V-002 for the MPS2 fourth 10-year interval, and relief requests P-001 and V-001 for MPS3 third 10-year IST interval are authorized on the basis that the proposed alternative provides reasonable assurance of pump and valve operability and compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety.

Principal Contributor: J. Huang

Date: October 24, 2008

for the MPS3 third 10-year IST interval are authorized on the basis that that the proposed alternative would provide reasonable assurance of pump and valve operability and compliance with the Code requirements would result in hardship without a compensating increase in the level of quality and safety.

If you have any questions, please contact Carleen Sanders at 301-415-1603.

Sincerely,

/ra/ (REnnis for)

Harold Chernoff, Chief
Plant Licensing Branch I-2
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation

Docket Nos. 50-336 and 50-423

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