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January 24, 2020 10 CFR 50.55a
NRC-20-0012

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

Fermi 2 Power Plant
NRC Docket No. 50-341
NRC License No. NPF-43

Subject: Submittal of Valve Relief Requests VRR-010 and VRR-011 for the Inservice Testing Program Fourth 10-Year Interval

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (z), DTE Electric Company (DTE) hereby requests NRC approval of the following relief requests for the Fermi 2 Inservice Testing (IST) Program fourth 10-year interval, which begins on February 17, 2020 and ends on February 16, 2030.

- VRR-010, Relief from Motor Operated Valve Preservice Testing for Residual Heat Removal Valves
- VRR-011, Relief from Motor Operated Valve Preservice Testing for High Pressure Coolant Injection and Reactor Core Isolation Cooling Valves

The enclosures to this letter provide details of each of the individual relief requests. Relief requests VRR-010 and VRR-011 are new relief requests for Fermi 2.

DTE requests NRC approval of the relief requests VRR-010 and VRR-011 by February 16, 2020 such that the request is approved prior to beginning the fourth 10-year interval.

No new commitments are being made in this submittal.

Should you have any questions or require additional information, please contact Mr. Jason R. Haas, Manager – Nuclear Licensing, at (734) 586-1769.

Sincerely,

Peter Dietrich
Senior Vice President and Chief Nuclear Officer

Enclosures:
1. Relief Request VRR-010 for the IST Fourth 10-Year Interval
2. Relief Request VRR-011 for the IST Fourth 10-Year Interval

cc: NRC Project Manager
NRC Resident Office
Regional Administrator, Region III

Enclosure 1 to
NRC-20-0012

Fermi 2 NRC Docket No. 50-341
Operating License No. NPF-43

Relief Request VRR-010 for the IST Fourth 10-Year Interval

10 CFR 50.55a Relief Request VRR-010

Relief from Motor Operated Valve Preservice Testing for RHR Valves

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)

Requirement Results in Hardship Without a Compensating Increase in Quality and Safety

1. ASME Code Component(s) Affected

Valve Identification (PIS) No.	Noun Description	ASME Code Class	OM Valve Category	Plant Drawing
E1150F006A	Residual Heat Removal (RHR) Division 1 Pump "A" Shutdown Cooling Isolation MOV	2	B	M-5706-2
E1150F006B	RHR Division 2 Pump "B" Shutdown Cooling Isolation MOV	2	B	M-5706-1
E1150F006C	RHR Division 1 Pump "C" Shutdown Cooling Isolation MOV	2	B	M-5706-2
E1150F006D	RHR Division 2 Pump "D" Shutdown Cooling Isolation MOV	2	B	M-5706-1

2. Applicable Code Edition and Addenda

ASME OM Code 2012 Edition, No Addenda

3. Applicable Code Requirement

ASME OM Code Mandatory Appendix III, "Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants," Section III-3200, "Preservice Test," states that each Motor Operated Valve (MOV) "shall be tested during the preservice test period or before implementing inservice testing." Section III-3200 further states that "Testing that meets the requirements of this Mandatory Appendix but conducted before implementation of this Mandatory Appendix can be used."

4. Reason for Request

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (z)(2), relief is requested to deviate from the requirement of ASME OM Code 2012 Edition Mandatory Appendix III Section III-3200 which requires preservice testing to be completed during the preservice test period. The basis of the relief request is that the compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

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Relief from Motor Operated Valve Preservice Testing for RHR Valves

The fourth 10-year interval update at Fermi 2 required implementation of Mandatory Appendix III of the ASME OM Code 2012 Edition, which essentially folded the existing Generic Letter (GL) 96-05 MOV Program into the IST Program. During the Fermi 2 reconciliation effort between valves within the existing scope of GL 96-05 and the current third 10-year IST interval, it was determined that four RHR MOVs that were not in the existing scope of the GL 96-05 MOV Program should be included in the Appendix III scope for the fourth 10-year IST interval. Preservice testing that meets the requirements of Mandatory Appendix III Section III-6100 has not yet been performed for these four valves. Due to the operational risk involved in performing diagnostic testing for these MOVs during online plant operation, it has been determined that testing should not be performed until the plant is offline. The next testing opportunity is the next refueling outage (RF20), which is scheduled for the spring of 2020, which is after the fourth 10-year IST interval start date of February 17, 2020.

Thus, Fermi 2 is requesting a brief delay in performance of preservice testing for these four valves. Following completion of testing during RF20 in spring of 2020, all applicable Code testing requirements for the subject valves will be implemented and observed for the remainder of the fourth 10-year interval. The late identification of the need for relief has been entered into the Fermi 2 Corrective Action Program.

5. Proposed Alternative and Basis for Use

The proposed alternative is to perform diagnostic testing during the first refueling outage after Appendix III implementation for the four valves. The refueling outage is planned for the spring of 2020. This test will serve as the preservice test for each valve. Following completion of testing during RF20 in spring of 2020, all applicable Code testing requirements will be implemented and observed for the remainder of the fourth 10-year interval.

Work orders (WOs) were prepared to perform the Appendix III required diagnostic testing. The WOs were initially scheduled to be performed during the preservice period. Subsequent review of the WOs just prior to performance identified a potential operational risk of performing the work online. The diagnostic testing requires removal of switch covers, exposing components associated with the Low Pressure Coolant Injection (LPCI) loop select logic. An inadvertent short could occur which could result in the inoperability of LPCI loop select, which would result in the loss of safety function of LPCI to mitigate the consequences of an accident. During online plant operation, this condition would result in entry to Technical Specifications (TS) Limiting Condition for Operation (LCO) 3.0.3 and rapid plant shutdown would be required. On the other hand, performance of this work while the plant is already shutdown does not result in operational risk since LPCI loop select logic is not required in that plant mode. Since identification of this operational risk, the first available

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Relief from Motor Operated Valve Preservice Testing for RHR Valves

opportunity to perform the WOs while the plant is shutdown will be during RF20 in spring of 2020, which is just after the preservice period.

MOVs E1150F006A/B/C/D are gate valves and are normally closed. The valves have a close safety function to remain closed or reclose during design basis events to ensure proper alignment of the RHR system and allow the RHR pumps to take suction from the suppression pool. The valves have an open safety function to allow alignment of RHR to the shutdown cooling mode of operation once certain temperature and pressure limits have been reached. Although the valves are normally closed, they are cycled quarterly for IST stroke time testing.

E1150F006A/B/C/D are controlled by a torque switch in the closing direction and a limit switch in the open direction. Additionally, the torque switch is bypassed by a limit switch for most of the closing stroke. For valve opening, full actuator capability, including reductions for degraded voltage and elevated temperature impacts on the motor, would be sufficient to overcome design basis conditions and ensure valve opening. For valve closure when the valve is not already closed, the full capability of the actuator would be available for closure for all but the final few percent of the valve stroke (i.e., up to approximately 95% closed).

Thrust testing was conducted on all four valves in the early 1990s. No valve internal work has been conducted since then. For three of the four valves, the torque switches have not been adjusted since the thrust testing. For the fourth valve, the torque switch setting was increased slightly since the thrust testing, which would increase actuator closure capability for that valve. In addition, motor control center-based (MCC-based) testing has been conducted periodically on the valves since the thrust tests were conducted. Previously performed testing has been successful. Based on application of current design basis conditions and Appendix III analysis requirements to previous testing results, the valves would be expected to fully open. For valve closure when the valve is not already closed, analysis results show it is possible that the closure of three of the four valves (i.e., the three valves with the slightly lower torque switch setting) could be interrupted by torque switch actuation before the valve is fully seated. Under typical conditions, full seating of all the valves is still successful, consistent with historical performance during quarterly stroke time testing. Maintaining the valves in their normal closed position eliminates any potential concern regarding full valve seating.

As described previously, the valves are stroke time tested quarterly for the IST Program. Recent quarterly test results have been successful. The valves will undergo stroke time testing a maximum of once more prior to the refueling outage. Other than during the brief period of performance of that stroke time testing (i.e., approximately one shift per division to test the two valves in the division), the valves will remain closed until the plant has been shut down. This means that for the entire period for which relief is sought (i.e., from February 17, 2020 until RF20 in the spring of 2020), the subject valves will remain in their required closed

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Relief from Motor Operated Valve Preservice Testing for RHR Valves

position for performing their close safety function other than the brief period for performing stroke time testing.

In summary, performing the Appendix III required MOV testing during the remaining preservice period, which is while the plant is online, represents a hardship or unusual difficulty without a compensating increase in the level of quality and safety since there is reasonable assurance that the valves can perform both their open and close safety functions until the testing is performed while the plant is shutdown in RF20.

6. Duration of Proposed Alternative

This proposed alternative will be utilized from the beginning of the fourth 10-year interval on February 17, 2020 until the end of the next refueling outage which is scheduled for the spring of 2020. The testing during the refueling outage in the spring of 2020 will then be used as the preservice testing for the duration of the fourth interval, which ends on February 16, 2030.

7. Precedent

No precedent was identified for this relief request.

Enclosure 2 to
NRC-20-0012

Fermi 2 NRC Docket No. 50-341
Operating License No. NPF-43

Relief Request VRR-011 for the IST Fourth 10-Year Interval

10 CFR 50.55a Relief Request VRR-011

Relief from Motor Operated Valve Preservice Testing for HPCI & RCIC Valves

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)

Requirement Results in Hardship Without a Compensating Increase in Quality and Safety

1. ASME Code Component(s) Affected

Valve Identification (PIS) No.	Noun Description	ASME Code Class	OM Valve Category	Plant Drawing
E4150F007	High Pressure Coolant Injection (HPCI) Main Pump Discharge Isolation MOV	2	A	M-5708-1
E5150F012	Reactor Core Isolation Cooling (RCIC) Pump Discharge Isolation MOV	2	A	M-5709-1

2. Applicable Code Edition and Addenda

ASME OM Code 2012 Edition, No Addenda

3. Applicable Code Requirement

ASME OM Code Mandatory Appendix III, "Preservice and Inservice Testing of Active Electric Motor Operated Valve Assemblies in Light-Water Reactor Power Plants," Section III-3200, "Preservice Test," states that each Motor Operated Valve (MOV) "shall be tested during the preservice test period or before implementing inservice testing." Section III-3200 further states that "Testing that meets the requirements of this Mandatory Appendix but conducted before implementation of this Mandatory Appendix can be used."

4. Reason for Request

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (z)(2), relief is requested to deviate from the requirement of ASME OM Code 2012 Edition Mandatory Appendix III Section III-3200 which requires preservice testing to be completed during the preservice test period. The basis of the relief request is that the compliance with the specified requirements of this section would result in hardship or unusual difficulty without a compensating increase in the level of quality and safety.

The fourth 10-year interval update at Fermi 2 required implementation of Mandatory Appendix III of the ASME OM Code 2012 Edition, which essentially folded the existing Generic Letter (GL) 96-05 MOV Program into the IST Program. During the Fermi 2 reconciliation effort between valves within the existing scope of GL 96-05 and the current

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third 10-year IST interval, it was determined that the two subject MOVs E4150F007 and E5150F012 that were not in the existing scope of the GL 96-05 MOV Program should be included in the Appendix III scope for the fourth 10-year IST interval. Rather than include these two valves in the Appendix III scope for the fourth 10-year IST interval, it was elected to reclassify the valves. The valve reclassification will result in the two subject MOVs being identified as passive valves and therefore no longer subject to Appendix III scope. This planned reclassification was noted in communication with the NRC in Footnote 11 to the Attachment 1 table of relief request VRR-004, Revision 1 (DTE letter NRC-19-0067, dated October 8, 2019). Note that NRC review and approval of the reclassification itself is not being requested in this submittal.

The safety functions currently performed by HPCI MOV E4150F007 will be reassigned to HCPI check valve E4100F005. Similarly, the safety functions currently performed by RCIC MOV E5150F012 will be reassigned to RCIC check valve E5100F014. In order to complete this reassignment, seat leakage testing of the check valves is required. Recent reviews have determined that the seat leakage testing of the check valves should not be performed online. The seat leakage testing of the check valves should be performed when the plant is shutdown as is done for the seat leakage testing of the MOVs. The next seat leakage testing opportunity is the next refueling outage (RF20), which is scheduled for the spring of 2020, which is after the fourth 10-year IST interval start date of February 17, 2020.

As a result of the check valve seat leakage testing restriction, reclassification of the MOVs cannot be completed until RF20. This means that the MOVs will continue to be relied on to perform their safety functions for the brief period from the interval start date of February 17, 2020 until RF20 in spring of 2020. For that brief period, the two MOVs will be subject to the requirements of Mandatory Appendix III, including the Section III-3200 preservice testing requirements. Preservice testing that meets the requirements of Mandatory Appendix III Section III-6100 was not previously performed for the two subject valves. The remaining preservice period available for preservice testing is during planned online operation. Preservice testing of the subject MOVs while online may result in operational risk due to the required testing lineup or, due to the presence of check valves, may yield test results that are not representative of expected conditions during performance of the safety function.

In summary, Fermi 2 is requesting a brief relief from the Appendix III requirements for preservice testing for the two subject MOVs. Following completion of seat leakage testing of check valves during RF20 in spring of 2020, reclassification of the MOVs will be completed, including reassignment of safety functions to the existing check valves. Appendix III requirements will then not apply to the MOVs for the remainder of the fourth 10-year interval. All applicable Code testing requirements for the check valves will be implemented and observed for the remainder of the fourth 10-year interval. The late identification of the need for relief has been entered into the Fermi 2 Corrective Action Program.

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5. Proposed Alternative and Basis for Use

The proposed alternative is to defer diagnostic testing of the subject valves to the first refueling outage after Appendix III implementation for the two MOVs. The refueling outage is planned for the spring of 2020. Following completion of seat leakage testing of check valves during RF20 in spring of 2020, reclassification of the MOVs will be completed, including reassignment of safety functions to existing check valves. Appendix III requirements will then not apply to the MOVs for the remainder of the fourth 10-year interval. All applicable Code testing requirements for the check valves will be implemented and observed for the remainder of the fourth 10-year interval.

The HPCI and RCIC systems provide for high pressure injection to the reactor pressure vessel (RPV). The suction side of these systems is at low pressure. Pressure isolation valves (PIVs) are provided to prevent the possibility of exceeding the design pressure in the suction side of these systems and thus causing an inter-system loss of coolant accident (ISLOCA). Two PIVs are required for each high-to-low-pressure boundary. For both HPCI and RCIC, there are three valves outside containment that could be credited to provide a pressure isolation function. In order from RPV towards pump discharge, the valves are:

- A normally closed MOV in each system which is also a primary containment isolation valve (PCIV) (E4150F006 for HPCI and E5150F013 for RCIC).
- A normally open MOV in each system (E4150F007 for HPCI and E5150F012 for RCIC). These valves are the subject valves of this relief request.
- A check valve in each system (E4100F005 for HPCI and E5100F014 for RCIC).

The configuration for each system is also shown in Attachment 1 to this relief request.

For HPCI, MOVs E4150F006 and E4150F007 are currently identified as the PIVs. Similarly, for RCIC, MOVs E5150F013 and E5150F012 are currently identified as the PIVs. These four MOVs are seat leakage tested and stroke time tested per the IST Program. The seat leakage testing of these four MOVs also satisfies Fermi 2 Technical Specification (TS) 3.4.5, "RCS Pressure Isolation Valve (PIV) Leakage." The check valves E4100F005 and E5100F014, although capable of performing a PIV function, are currently not designated as PIVs and therefore have not been previously required to be seat leakage tested.

Note that the third 10-year IST interval relief request VRR-013 allows for the seat leakage testing of the four MOVs above to be performed at the Appendix J frequency (ML102360570 and ML17354B002). A similar relief request was re-submitted for the fourth 10-year IST interval as VRR-003 by DTE letter NRC-19-0025 (ML19149A329), dated May 29, 2019, and is currently under NRC review for approval. The four MOVs above were included in the relief requests but the two check valves were not identified in the relief requests as they were

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Relief from Motor Operated Valve Preservice Testing for HPCI & RCIC Valves

not previously seat leakage tested as described above. No modifications are being proposed to relief request VRR-003 currently under NRC review.

The PIV closest to containment for both HPCI and RCIC, MOVs E4150F006 and E5150F013, are also PCIVs as described previously. These valves are credited as the first of the two required PIVs for the HPCI and RCIC high-to-low pressure boundary. These valves will meet all Mandatory Appendix III requirements for the fourth 10-year IST interval. No new relief is being requested for these valves and no changes are being proposed or considered.

The second of the two required PIVs for the HPCI and RCIC high-to-low pressure boundary are currently (and have historically been) MOVs E4150F007 and E5150F012. In addition to their close (i.e., PIV) safety function, the valves also have an open safety function to allow HPCI and RCIC flow. Both valves were determined to be susceptible to pressure locking in the Fermi 2 review following issuance of GL 95-07, "Pressure Locking and Thermal Binding of Safety-Related Power-Operated Gate Valves." The valves have been administratively controlled in the open position to preclude the potential for pressure locking. RCIC valve E5150F012 has also been de-energized. These administrative actions assure their open safety function can be met at all times HPCI and RCIC are required to be available. If E4150F007 or E5150F012 are closed, the affected system (i.e., HPCI or RCIC) must be declared inoperable.

Since E4150F007 and E5150F012 are maintained opened and have no automatic closing logic, the valves must be manually closed in order to perform their PIV function. The HPCI and RCIC pumps have pressure sensors to detect high suction pressure that could be indicative of a failure to maintain the PIV function. This indication could be caused by leak through or mispositioning of the first PIV (i.e., E4150F006 / E5150F013) combined with leak through of the check valve (i.e., E4100F005 / E5100F014). The high suction pressure would result in control room alarms and the corresponding alarm response procedures direct the operators to close E4150F007 for HPCI or E5150F012 for RCIC. Note that since the RCIC valve E5150F012 is de-energized, the alarm response procedure currently directs operators to close the valve locally (i.e., at the handwheel). The strategy to utilize local actions for the RCIC valve (or temporarily re-energizing the RCIC valve so it can be closed from the control room) was provided to the NRC by DTE letter NRC-88-0084, dated April 8, 1988, in response to NRC Bulletin 85-03, "Motor-Operated Valve Common Mode Failures During Plant Transients Due to Improper Switch Settings."

Re-assignment of the "second" PIV function from MOVs E4150F007 and E5150F012 to check valves E4100F005 and E5100F014 for HPCI and RCIC, respectively, is in progress. The benefits of this reassignment are to preclude the reliance on manual operation of the MOVs and eliminate the pressure locking concern. However, formal re-assignment of the function cannot be completed without seat leakage testing of the check valves and seat

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leakage tested has not been previously performed, although it will be performed during RF20 in spring of 2020. In addition, the new application of the GL 96-05 methodology to these MOVs as would be required under Appendix III predicts that these MOVs would not be able to be fully closed under design conditions (i.e., ΔP corresponding to full RPV design pressure). Assurance of the "second" PIV function by MOVs E4150F007 and E5150F012 until formal re-assignment can be completed is provided as described for each valve separately below.

HPCI MOV E4150F007

E4150F007 has successfully passed all recent seat leakage testing and meets all TS requirements for leakage once closed. The valve is also exercised and stroke time tested in both the open and closed direction quarterly and position indication tested every two years. These tests have also been successful. The valve can be expeditiously closed from the control room by operators according to an existing alarm response procedure upon a high HPCI suction pressure alarm. As described above, new application of the GL 96-05 methodology to this MOV indicates that it would not be able to be fully closed under design conditions (i.e., ΔP corresponding to full RPV design pressure of >1000 psi). However, the presence of upstream check valve E4100F005 would reduce the ΔP across the valve and allow for successful closure as discussed below. Credit for this check valve to assist MOV closure, even prior to seat leakage testing during RF20, is reasonable as described as follows.

Check valve E4100F005 was considered an active valve during the third 10-year IST interval with both open and close safety functions. It underwent open and close exercising in accordance with Code requirements. The check valve is exercised during quarterly HPCI surveillances, with all recent performance successful. The check valve has low pressure HPCI keep-fill (approximately 180 psi) on the downstream side during normal operations. Were seat leakage through the check valve to occur during normal operations, an increase in pressure on the upstream side of the check valve would be noted by the high suction pressure alarm in the control room as described above. Quarterly HPCI surveillances also include verification of no high suction pressure alarm to verify check valve closure. This provides confidence that there is little to no existing leakage through the check valve. In addition, were an ISLOCA to occur, the higher pressures involved would result in a significantly higher check valve disc seating force than is normally present from HPCI keep-fill. This would be expected to limit leakage (if any) even further and would result in a significant buildup of pressure downstream of the check valve. Periodic check valve inspections conducted on E4100F005 also provide confidence in its material condition. Calculations using the GL 96-05 methodology indicate that E4150F007 would be capable of closure up to a ΔP of approximately 850 psi. The check valve capability during normal conditions or during assumed occurrence of an ISLOCA would be expected to reduce the differential pressure across the MOV

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E4150F007 to within this range such that MOV closure could be performed remotely from the control room. In the event that full closure of the MOV could not be obtained from the control room, the valve could still be closed locally at the handwheel by operations, if required.

RCIC MOV E5150F012

E5150F012 has successfully passed all recent seat leakage testing and meets all TS requirements for leakage once closed. The valve is also exercised and stroke time tested in both the open and closed direction quarterly and position indication tested every two years. These tests have also been successful. The valve can be closed locally by operators according to an existing alarm response procedure upon a high RCIC suction pressure alarm. To preclude local action, this MOV could also be re-energized to allow for operation from the control room. As described above, new application of the GL 96-05 methodology to this MOV indicates that it would not be able to be fully closed under design conditions (i.e., ΔP corresponding to full RPV design pressure of >1000 psi). However, the presence of upstream check valve E5100F014 would reduce the ΔP across the valve and allow for successful closure as discussed below. Credit for this check valve to assist MOV closure, even prior to seat leakage testing during RF20, is reasonable as described as follows.

Check valve E5100F014 was considered an augmented component during the third 10-year IST interval and underwent open exercising (updates to include both open and close exercising to meet Code requirements will be included in the fourth 10-year IST interval update). The check valve is exercised during quarterly RCIC surveillances, with all recent performance successful. Unlike HPCI, the RCIC system has no keep-fill and quarterly RCIC surveillances do not explicitly include verification of no high suction pressure alarm to verify check valve closure. However, review of the procedure indicates that the RCIC shutdown sequence results in a period where high pressure is locked in on the downstream side of the check valve with the pump off. If the check valve were not closed or were leaking through, this would result in increased pressure on the suction side of the pump that could result in the high suction pressure alarm occurrence, similar to HPCI as described above. A RCIC suction pressure alarm did occur in this manner due to check valve leak by in 1994. A disassembly and inspection of the check valve was performed, a new disc was installed, and a satisfactory post-installation blue check was performed. Since that time, no RCIC suction pressure alarm occurrence has been attributed to check valve leak by, indicating there is little to no existing leakage through the check valve. In addition, were an ISLOCA to occur, the higher pressures involved would result in a significant check valve disc seating force. This would be expected to further limit leakage (if any) and would result in a significant buildup of pressure downstream of the check valve. Calculations using the GL 96-05 methodology have not been performed for E5150F012, but it is estimated the MOV would be capable of closure

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up to a ΔP of approximately 500 psi. The check valve capability would be expected to reduce the differential pressure across the MOV E5150F012 to within this range such that the MOV could be re-energized and then closed remotely from the control room. In the event that full closure of the MOV could not be obtained from the control room, the valve could still be closed locally at the handwheel by operations, if required. Closure of the valve locally is consistent with the design and licensing basis of the plant since the 1988 response to NRC Bulletin 85-03.

As an additional consideration, the above discussion has only considered the pressure isolation function capability of the three valves outside containment. As indicated by the figures in Attachment 1, there is also a check valve inside primary containment for the HPCI and RCIC injection lines (B2100F010A for HPCI and B2100F010B for RCIC). These check valves are associated with the feedwater lines, since HPCI and RCIC inject through the feedwater lines. These feedwater check valves are PCIVs and are seat leakage tested. While not considered explicitly as PIVs for HPCI and RCIC, these check valves would function to prevent an ISLOCA in the HPCI and RCIC lines due to pressure from the RPV. Note that due to the connection point of the feedwater lines between the two PCIVs (not shown in the Attachment 1 figures) these check valves would not protect against a possible high pressure in the HPCI or RCIC suction lines caused by feedwater flow. However, this scenario would not result in an ISLOCA but could potentially result in an event where plant response would be similar to a feedwater line break. Therefore, check valves B2100F010A and B2100F010B are not classified as PIVs but do provide additional defense-in-depth for performing the PIV function for prevention of ISLOCA beyond the two explicitly credited PIVs.

In summary, HPCI MOV E4150F007 and the RCIC MOV E5150F012 have been the designated “second” PIVs for the entire third 10-year IST interval. These MOVs, with the reduced differential pressure created by the upstream check valves, will remain capable of being closed from the control room to perform their PIV function. These MOVs will also remain capable of being closed locally by handwheel, as necessary, to perform their PIV function. Assurance of the PIV function will therefore be maintained for the brief time period between the beginning of the fourth 10-year IST interval and RF20 in spring of 2020, even without performance of Appendix III preservice testing. Therefore, performing the Appendix III required MOV testing during the remaining preservice period, which is while the plant is online, represents a hardship or unusual difficulty without a compensating increase in the level of quality and safety since there is reasonable assurance that the MOVs can perform their safety functions until valve re-classification and re-assignment following check valve seat leakage testing to be performed while the plant is shutdown in RF20. As discussed previously, NRC review and approval of the reclassification itself is not being requested in this submittal.

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6. Duration of Proposed Alternative

This proposed alternative will be utilized from the beginning of the fourth 10-year interval on February 17, 2020 until the end of the next refueling outage which is scheduled for the spring of 2020. Following completion of seat leakage testing of check valves during RF20 in spring of 2020, reclassification of the MOVs will be completed. Appendix III requirements will then not apply to the MOVs for the remainder of the fourth 10-year interval. All applicable Code testing requirements for the check valves will be implemented and observed for the remainder of the fourth 10-year interval, which ends on February 16, 2030.

7. Precedent

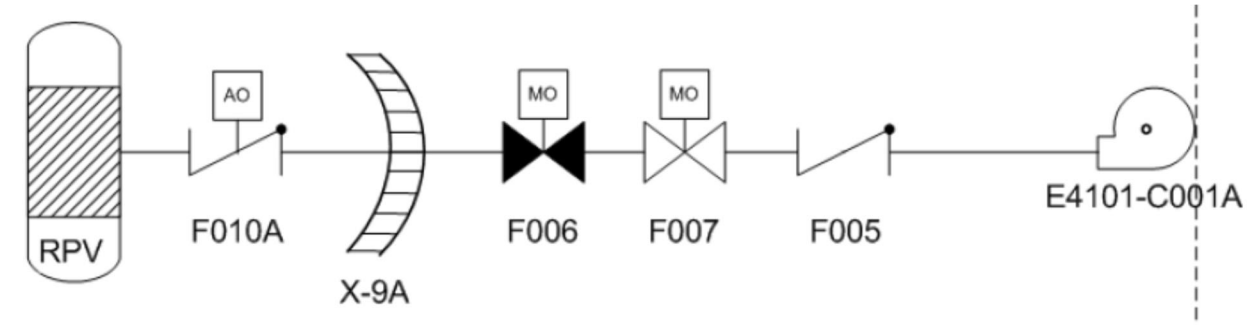
No precedent was identified for this relief request.

8. Attachments

1. HPCI and RCIC Injection Line Configurations [1 page]

HPCI and RCIC Injection Line Configurations

HPCI Configuration

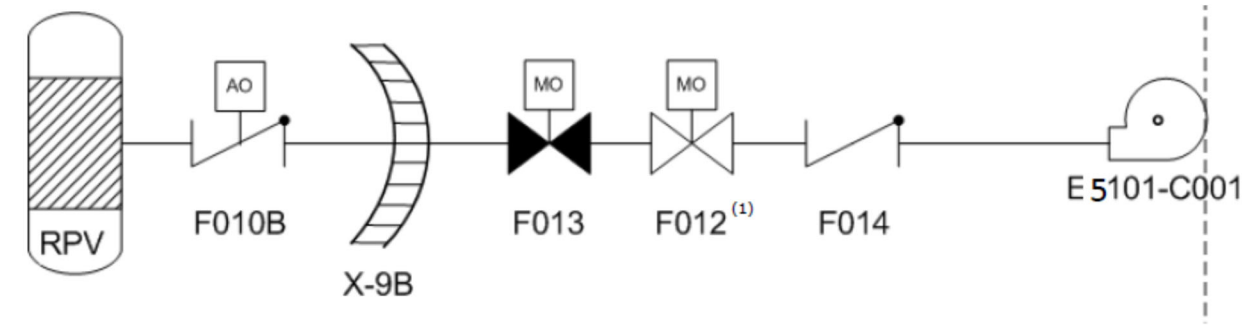


Legend

Containment DW Boundary

High Pressure to Low Pressure Transition

RCIC Configuration



Legend

Containment DW Boundary

High Pressure to Low Pressure Transition

(1) E5150F012 is open and de-energized