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10 CFR 50.55a

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

Subject: Duke Energy Carolinas, LLC (Duke Energy)
McGuire Nuclear Station, Unit 2
Docket No. 50-370
Relief Request MC-SRV-NS-02
Containment Narrow Range Pressure Inside Isolation Valve 2NSSV5550

Pursuant to 10 CFR 50.55a(z)(2), Duke Energy hereby requests U.S. Nuclear Regulatory Commission (NRC)'s approval for an alternative to performing inservice testing on Containment Narrow Range Pressure Inside Isolation Valve 2NSSV5550. Duke Energy is requesting to delay quarterly valve stroke time and two year position verification testing until after repair of the valve's position indication during the next Unit 2 refueling outage in the fall of 2018. Repair of the valve's position indication now would create a hardship due to personnel safety and ALARA considerations.

The late date for the next quarterly test is March 11, 2018. Duke Energy requests NRC's approval of this relief request by March 5, 2018.

If you have any questions or require additional information, please contact P.T. Vu of Regulatory Affairs at (980) 875-4302.

Sincerely,

Jimmy Glenn
for

Thomas D. Ray, P.E.

Attachment

AD47
NRR

xc:

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McGuire Nuclear Station Unit 2 - Specific Valve Relief Request MC-SRV-NS-02

Proposed Alternative in Accordance with 10 CFR 50.55a(z)(2)
-- Hardship without a compensating increase in quality and safety --

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1. ASME Code Component(s) Affected:

Unit 2 Containment Narrow Range Pressure Inside Isolation Valve 2NSSV5550.

2. Component Function:

2NSSV5550 is a normally open fast acting solenoid valve located on the impulse line for the narrow range containment pressure transmitter. The valve serves as the inside containment isolation valve for containment penetration 2M402A and closes on a containment isolation signal. 2NSSV5550 is located in the 2D cold leg accumulator room inside the Unit 2 reactor building.

3. Applicable Code Edition and Addenda:

ASME OM Code 2004 through 2006 Addenda.

4. Applicable Code Requirements:

Quarterly valve stroke time (VST) testing in closed direction [ASME OMb-2006, section ISTC-5150]; Two year position verification testing [ASME OMb-2006, section ISTC-3700].

Note that the quarterly exercise testing [ASME OMb-2006, section ISTC-3510] is applicable but not included as a part of this relief request.

5. Reason for Request:

Nuclear Condition Report (NCR) 02184928 was initiated by Operations on February 15, 2018. The NCR identifies an issue with not being able to obtain a valid VST for 2NSSV5550 during normal quarterly surveillance test on February 15, 2018. The VST procedure utilizes the plant Operator Aid Computer (OAC) for indication signal timing from open to closed. It was determined that the OAC indication shows the valve position to be intermediate when the main control board indication shows correct valve position.

Erratic OAC indication began in October 2015 following 2NSSV5550 coil replacement with periods of correct indication. Repair of 2NSSV5550 OAC indication was attempted on February 6, 2018, per Work Order 20025829. Technicians were able to obtain correct OAC indication momentarily by making adjustments to the solenoid valve reed switches; however, proper OAC indication could not be sustained as the solenoid valve cover was reinstalled and torqued. Due to the component location, technicians were allotted a one hour stay time due to heat stress (with ice vest) and ALARA considerations. Technicians exited the building without making repeated adjustments to fine tune the solenoid valve reed switches.

Repair of 2NSSV5550 OAC indication would require an extended amount of time at the solenoid valve to make required reed switch adjustments. Due to hardship created by

personnel safety and ALARA considerations, McGuire proposes repair during the next Unit 2 refueling outage M2R25 scheduled to begin on September 15, 2018.

Control room valve position indication is available on the main control board. Control room indication was observed to be consistent with actual valve position when technicians were present at the solenoid valve on February 6, 2018. Consideration was given to performing VST testing using main control board indication and a calibrated stopwatch. Given the fast acting nature of the solenoid valve, operator uncertainty would likely be in excess of the expected valve stroke time, resulting in inconsistent data. For this reason, McGuire does not intend to use this alternate testing method.

2NSSV5550 has a history of excellent VST performance. Table 1 summarizes VST data for the previous two years. The VST acceptance criteria for 2NSSV5550 is < 2 seconds per ISTC-5152(c), which applies to fast acting solenoid valves.

Table 1: 2NSSV5550 VST results

VST Surveillance Date	Results (sec)	Percent of Allowable (%)
2/15/16	0.4	20
5/19/16	0.2	10
8/18/16	0.1	5
11/10/16	0.3	15
2/16/17	0.1	5
4/15/17	0.1	5
5/18/17	0.2	10
8/18/17	0.1	5
11/16/17	0.1	5

Penetration 2M402A outside containment isolation valve 2NSSV5551 will continue to be tested in accordance with all ASME OM code requirements. Historic results for 2NSSV5551 are consistent with 2NSSV5550 and range between 0.1 and 0.3 seconds. Both solenoid valves are subject to 10 CFR 50 Appendix J Containment Leak Rate Testing. For valves 2NSSV5550 and 2NSSV5551, the most recent Type C local leak rate test occurred on April 16, 2017, with results of 5 sccm and 6.4 sccm respectively compared to an administrative leakage test limit of 73 sccm. Prior Appendix J testing results have been excellent with both valves demonstrating significant margin to allowable leakage limits.

2NSSV5550 visual verification requirements are satisfied by visually checking OAC position against main control board indication. Since OAC indication is currently unreliable, McGuire proposes relief from ISTC-3700 requirements for the duration discussed in Section 7. Valve remote position verification is satisfied by performing Type C local leak rate testing, which was last performed on April 16, 2017, as previously discussed.

6. Proposed Alternative and Basis for Use:

As an alternative to performing 2NSSV5550 quarterly VST testing [ISTC-5150] and two year position indication verification testing [ISTC-3700], McGuire is requesting to suspend VST and position indication testing until M2R25 repairs are complete as discussed in Section 7. 2NSSV5550 can still be exercise tested quarterly in accordance with ISTC-3510. In the

event of a containment isolation signal, reasonable assurance of valve closure and containment isolation is demonstrated through previous testing (VST and Appendix J) and local observation of valve position as indicated on the control room main control board. Based on available data, McGuire considers deferral of the proposed testing for the requested duration to be low risk without compromising quality or safety.

7. Duration of Proposed Alternative:

This relief request is only intended to permit McGuire Unit 2 operation for a limited period of time, not to exceed restart from the next Unit 2 refueling outage M2R25. Work Order 20025829 will complete necessary OAC indication repairs during M2R25, which is scheduled to begin on September 15, 2018. Following the refueling outage, McGuire will resume inservice testing of 2NSSV5550 per applicable ASME OM Code requirements.

8. References:

a) Duke Energy, McGuire Nuclear Station ASME Inservice Testing Program, Revision 28, dated March 1, 2013.
b) NEI white paper "Standard Format for Requests from Commercial Reactor Licensees Pursuant to 10 CFR 50.55a," Revision 1, dated June 2004.
c) NUREG-1482, Revision 2, "Guidelines for Inservice Testing at Nuclear Power Plants," published October 2013.
d) Duke Energy fleet procedure AD-EG-ALL-1720, Revision 02, "Inservice Testing (IST) Program Implementation," dated February 7, 2017.
e) NCR 02183451, Team 319 week 06 unable to complete schedule.
f) NCR 02184928, Unable to complete VST Quarterly due to bad OAC indication.
g) WO 20025829, 2NSSV5550 Intermediate on OAC but closed on MCB.
h) AR 02184102, add 2NSSV5550 to outage (M2R25) scope.
i) McGuire Flow Diagram MCFD-2563-01.00, Revision 19, Containment Spray (NS) System.
j) MCTC-1563-NS.V008-01, Testing and Acceptance Criteria Solenoid Valves 1/2NSSV5550 and 1/2NSSV5551.
k) MCS-1563.NS-00-0001, Revision 34, Design Basis Specification for the NS System.